Virginia Department of Mines, Minerals and Energy March 1998

State Agency Energy Management Bulletin

Information for Agency Energy Managers and FASER Users at Virginia State Agencies

DMME to Offer Energy Efficiency Seminars

The Virginia Department of Mines, Minerals and Energy (DMME), in partnership with the U.S. Environmental Protection Agency (EPA) is pleased to offer agency energy managers and other facility decision makers free training seminars to help them to meet their agency energy reduction goals. These one-day seminars will cover two different topics, and will be tailored to meet the specific needs and concerns that confront state agencies. The seminars will be presented by The Cadmus Group, Inc., a contractor for the U.S. EPA Energy Star Buildings program.

Energy Efficient Lighting Technologies will show participants how their agencies can reduce energy expenditures *while improving the quality* of lighting in their facilities through the use of state-of-the-art lighting technologies. Discussions will include the latest lighting technologies, the importance of conducting a lighting survey, and how to identify the best lighting upgrade projects in their facilities. Agency energy managers, physical plant and maintenance staff and others who make decisions about energy projects are encouraged to attend. Each agency that attends will receive the EPA Energy Star *Building Know-How* manual, a comprehensive guide to facility lighting upgrade strategies (see **page 4** for examples from this manual). This seminar will be presented at three different locations around the state to help minimize participant travel time and expense. The *Energy Efficient Lighting Technologies* seminars will be held Tuesday, March 10 at Radford University in Radford, Wednesday, March 11 at the University of Virginia in Charlottesville and on Thursday, March 12 at Old Dominion University in Norfolk.

Administering Energy Efficiency Projects will discuss the most common barriers to successful energy project implementation, and will provide agency energy managers and other decision makers with the tools and knowledge to help overcome these barriers. In addition to presentations by U.S. EPA contractors, several Virginia state agency energy managers who have successfully implemented energy projects will share their experience. *Administering an Energy Project* will be held Tuesday, April 21 at The Library of Virginia, in Richmond.

Both the lighting technologies and the project administration seminars will be held from 9 a.m. to 4 p.m, and attendees will be responsible for lunch and parking. Registration for these seminars is being sent to agency energy managers and energy monitoring contacts. If you would like additional information, or if you did not receive a registration form in the mail and would like to attend, please contact Kendra Shifflett at (804) 692-3230 or via e-mail: kbs@mme.state.va.us.❖

Technical Procedures Review Manual

The DMME is pleased to announce the availability of the ***Technical Procedures Review Manual*** for state facility energy conservation and efficiency projects. These manuals were developed to provide information and guidance to engineers and architects who complete technical evaluations of energy efficiency retrofit projects. While the principal audience of the manual is the professional engineering community, others, such as facility energy managers or maintenance personnel, can use this manual to enhance their understanding of basic energy efficiency techniques and evaluation methodologies.

Volume I of the manual presents a wide variety of information to help the technical analyst complete a comprehensive technical analysis study. Among the topics covered by the manual are codes and standards, utility bill analysis, problematic energy conservation measures, project organization, economic analysis, and professional services for Virginia state agencies. The text is not intended to be an exhaustive treatment of these topics, and the reader is assumed to have a technical background and a familiarity with energy conservation concepts. **Volume II** of the manual presents data useful to the technical analyst in preparing an energy evaluation. Information such as

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climate data for the Commonwealth of Virginia, standard energy conversion factors, utility company rate schedules, and equipment service lives have been included to serve as a convenient reference.

Copies of the manual were distributed to all state agency energy managers in December of 1997. Additional copies may be obtained by contacting Vernon W. Banks at (804) 692-3227 or e-mail: vwb@mme.state.va.us.❖

Bids Sought for Small Biopower Systems

Sandia National Laboratories has released a request for quotation for *Small Modular Biopower System Development*. This procurement will be jointly funded by Sandia and the National Renewable Energy Laboratory and comprises the first step in what will be a larger development process. **Biopower systems** are systems designed to use biomass fuels such as wood, agricultural residues, and/or energy crops. The objective of this project is to develop a number of small, modular biopower systems that are fuel-flexible, efficient, simple to operate, whose operation has minimum negative impacts on the environment, and which will provide electrical generation in the range of 5 kW to 5 MW for domestic and international markets. The development of these systems will be cost-shared between the U.S. Department of Energy and industries within the U.S. This procurement, the first step in the process, is undertaken to evaluate the feasibility of developing cost-effective technologies and the markets for small, modular biopower systems. Biopower systems have distinct advantages over other systems because they are modular, require a minimum of field engineering and are simple to connect at customer sites. Bids for these projects are due to Sandia National Laboratory on March 20, 1998. For a copy of the RFQ or additional information, please contact William E. Peters, Sandia National Laboratories, MS 0212, Albuquerque, NM, 87185. Telephone (505) 844-4438, FAX (505) 284-4218, or e-mail wepeter@sandia.gov.❖

DOE Announces NICE³ Grant Program

The U.S. Department of Energy (DOE) sponsors an innovative, cost-sharing program to promote energy efficiency, clean production, and economic competitiveness in industry. The grant program, known as NICE³ (National Industrial Competitiveness through Energy, Environment & Economics), provides funding to state and industry partnerships (large and small business) for projects that develop and demonstrate advances in energy efficiency and clean production technologies. The overall goal of NICE³ is to improve industry energy efficiency, reduce industry's energy costs, and to promote clean production.

The DOE's timeline for 1999 projects is as follows:

- An optional two-page abstract is being accepted through May 15, 1998
- Solicitation for projects opens on June 15, 1998
- Solicitation closes on October 20, 1998
- Awards announced on or about February 28, 1999

For more information on the NICE³ program, eligibility and evaluation criteria, please contact the U.S. DOE at 1-800-DOE-EREC, or visit their web site at http://www.oit.doe.gov/Access/nice3/.❖

Virginia Alliance for Solar Electricity Seeks Projects for Cost-Sharing

A new public/private sector partnership offers unique opportunities for state agencies to reduce facility energy costs and consumption through the use of state-of-the-art photovoltaic technologies.

The new program, known as the *Virginia Alliance for Solar Electricity* (VASE), has secured $8.4 million of public and private support to install photovoltaic panels on non-residential buildings across Virginia. The cost-share funding, now available in Phase II of the program, enables building owners to purchase solar electric systems at about half the current market cost. For those owners who have little or no experience with this solid state technology, design, engineering, and installation services are also offered in the program.

The Alliance is comprised of the Virginia Department of Mines, Minerals and Energy, Virginia's Center for Innovative Technology, Virginia Power, the U.S. Department of Energy, and Solarex – a unit of Amoco Enron Solar. Designed to expand and accelerate the use of solar panels manufactured at the new $30 million

Solarex manufacturing facility located in James City County, the Alliance will work with interested parties to submit project proposals for review. "We understand that not everybody out there is familiar with these type of systems. In fact, we expect many ideal candidates not to be, and that is why we are eager to work one-on-one with facility personnel to help them qualify for the program," says Chris Whiteley, the VASE Director of Program Development. Proposals will be evaluated and selected for cost-share funding on a "first come, first served" basis until the program's total deployment goal of 1.15 megawatts of electricity has been met.

Of the effort, Governor Gilmore stated "This program represents the Commonwealth's aggressive efforts to advance the use of this Virginia-based product while encouraging its use in the private and public sectors. By participating in the program, building owners can help support a growing Virginia industry and reduce their own energy costs."

The Alliance is looking for projects in the size range of 25 to 350 kW. Eligible projects must be completed by 1999, and fall within one of the following categories.

- **Building-integrated systems** - use solar panels to actually replace building materials, i.e. curtain walls, awnings, marble facings, or roofing. Functioning the same as roof-top systems, these systems offer additional economic savings through reduced building material cost. In addition, building-integrated systems offer architects and builders unique design options to help them set their buildings apart from others visually (Figure 1).

- **Commercial roof-top** – uses dead roof space to generate electricity. Any electricity not used by the facility is fed back into the electric utility grid for use by other customers (Figure 2).

- **Ground based systems** for hybrid micro-utility – these systems are an attractive alternative to extending grid power. Hybrids use solar electricity in conjunction with some other on-demand generating device, such as diesel, propane or wind generators. These systems are a cost-effective, reliable energy source at sites where grid power is unavailable (Figure 3).

Through the Virginia Energy Plan, state agencies are encouraged to look for opportunities to reduce energy cost and consumption using renewable energy technologies. According to Susan Thomas, DMME Renewable Energy Project Manager, "This program offers state energy managers a unique window of opportunity to take advantage of significantly

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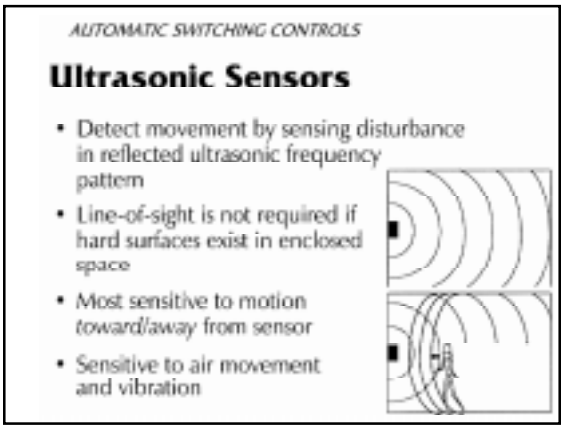
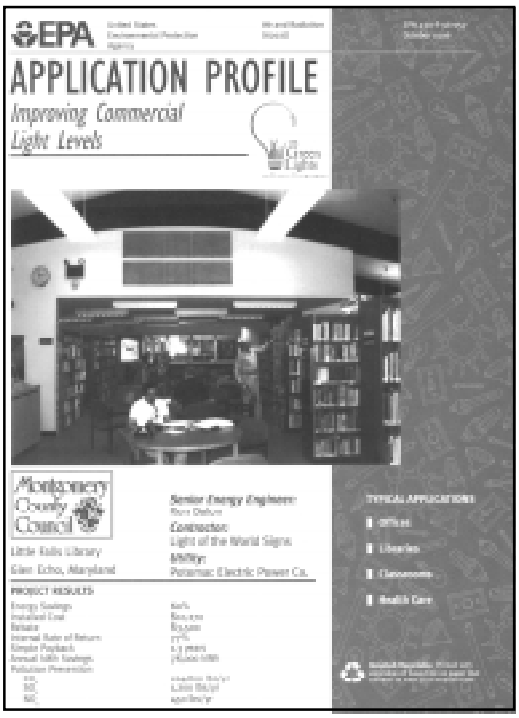
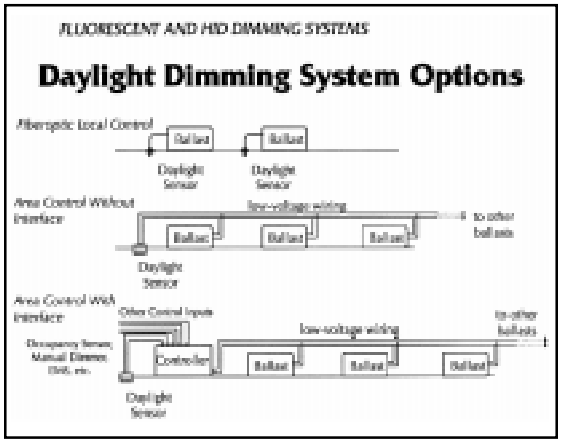
Figure 1 - With Solarex mounting and sealing techniques, this photovoltaic array serves the roof's weatherproofing function, effectively reducing the total PV cost.

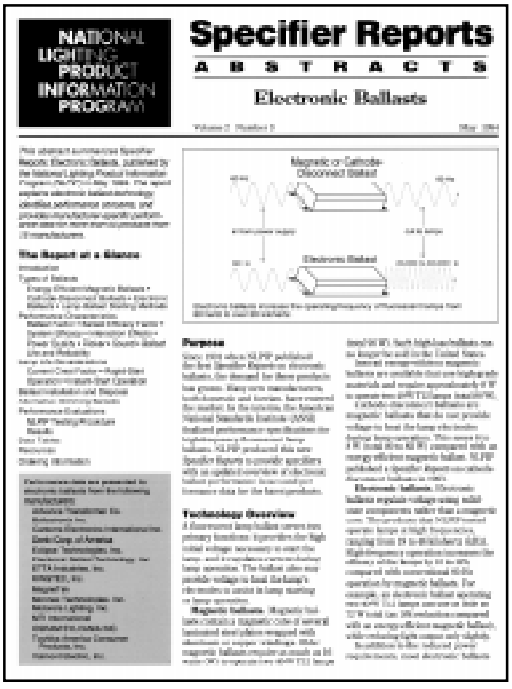
Department of Mines, Minerals and Energy
Energy Efficiency Seminars
Spring 1998

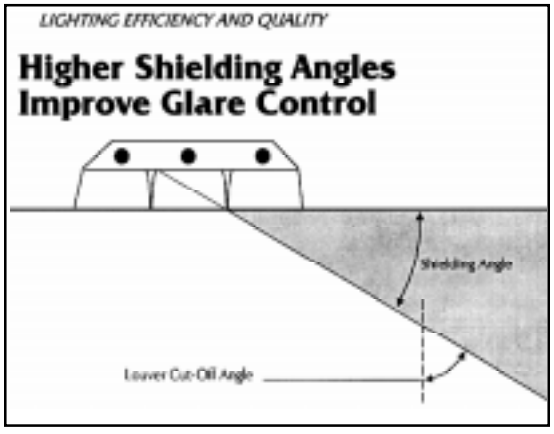
Examples of the information participants of the Energy Efficient Lighting Technologies seminars will receive











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reduced costs for this state-of-the-art, Virginia-manufactured renewable energy technology." With the additional design and engineering assistance offered through the VASE program, even agencies with limited "technical staff" can participate. The key will be to identify facilities for which this technology can offer the greatest savings and those agencies with the ability to expedite a project through the approval process within the program's short time frame.

The first solicitation for the Alliance successfully identified five projects for funding under the program, including: University of Virginia's School of Architecture, Dulles Center of the Smithsonian Institution's National Air and Space Museum, George Washington University's Virginia Campus, The Nature Conservancy and Delmarva Power on the eastern shore of Virginia, and EcoVillage of Loudoun County.

Beginning March 31, 1998, the Alliance will accept new project proposals to identify additional projects for funding. "We are very pleased with the results from Phase I of the program and we look forward to continuing that success in Phase II," stated Gerry Braun, Solarex's Director of Business Development.

The Virginia Alliance for Solar Electricity complements the federal *Million Solar Roofs Initiative's* goal of having solar power installed on one million buildings in the U.S. by the year 2010. The Million Solar Roofs Initiative is expected to help bring the cost of solar energy down, enabling U.S. companies to retain their competitive edge with European and Japanese companies. The Initiative will also supply products to a worldwide PV market expected to exceed $1.5 billion by 2005.

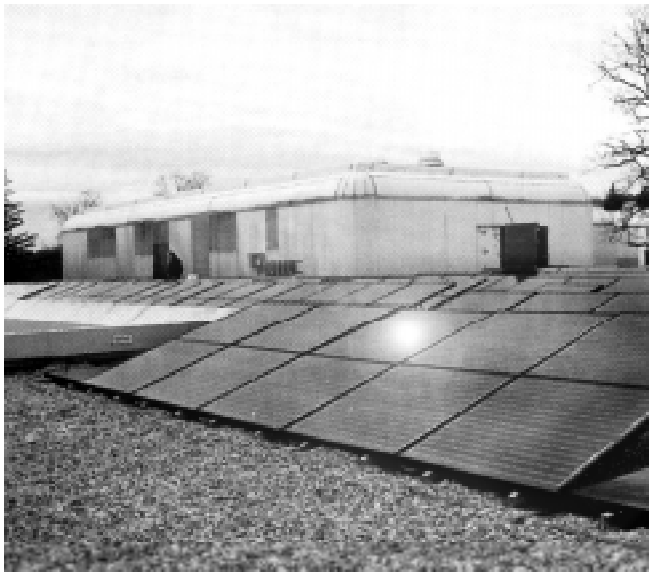

Figure 2 - These flat-surface roof top systems are easily installed, either tied to roof beams or relying primarily on ballast to maintain position.

Figure 3 - A strategically located ground based hybrid system can be a cost-effective alternative to utility line extension.

For more information on the Virginia Alliance for Solar Electricity, or to receive a copy of the new program solicitation, contact Chris Whiteley at (202) 337-0459 or via e-mail at solarpwr@aol.com.❖

DMME Awards State Agency Energy Conservation Grants

To promote energy efficiency in state facilities the DMME recently awarded 19 grants for building energy retrofit projects under the ***Virginia State Agency Energy Conservation Grant Program***. Grant funds totaling $949,291 were awarded for a wide range of energy efficiency initiatives which are projected to save participating agencies over $250,000 annually in reduced facility operating costs. Grantee agencies are providing $162,880 in local matching funds for a total investment for all projects of $1,112,171. These projects should be completed in 1998, and will have an average simple payback of 4.4 years. Typical projects include high efficiency lights (electronic ballasts with T8 tubes), high efficiency boilers, chillers and motors. See **page 6** for a list of agencies that received grant funding through this program. For more information on these grant projects, please contact Vernon Banks at (804) 692-3227 or e-mail: vwb@mme.state.va.us. ❖

DMME would like to congratulate these *State Agency Energy Conservation Grant* recipients, and encourage all Virginia state agencies to continue their excellent energy management efforts.

Agency	Grant Amount	Project
Department of Corrections	$40,220	Domestic Hot Water Upgrade
James Madison University	$42,305	Variable Speed Motors
Longwood College	$85,278	New Chiller & Steam Traps
Mountain Empire Community College	$53,081	Energy Efficient Lights
New River Community College	$71,731	Energy Efficient Lights
Old Dominion University	$50,160	Energy Efficient Lights
Radford University	$56,996	Energy Efficient Lights
Southwest Community College	$58,374	Energy Efficient Lights
Thomas Nelson Community College	$49,059	Energy Efficient Lights
University of Virginia - Hospital	$47,603	Energy Efficient Lights
University of Virginia - College	$59,203	Energy Efficient Lights
VDOT - Culpeper District	$12,000	Energy Efficient Lights
VDOT - Fredericksburg District	$9,602	Energy Efficient Lights
Virginia School for the Deaf and Blind	$7,350	Exit Signs Retrofits
Virginia Institute of Marine Sciences	$41,433	Energy Efficient Lights & Boiler
Virginia Military Institute	$69,066	Energy Efficient Lights & Boiler
Virginia Tech	$48,464	Energy Efficient Lights
Wytheville Community College	$69,066	Fan Coil Units & New boiler
Total for 19 Agencies:	**$949,291**	

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***Agency Energy Managers*:**
Please file this Bulletin in Section 10 of your *Agency Energy Management Resource Guide*